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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,564	04/01/2004	David S. Graham	GRAMP005/P06002	3810
22434	7590	04/16/2007	EXAMINER	
BEYER WEAVER LLP			NGUYEN, JIMMY H	
P.O. BOX 70250			ART UNIT	PAPER NUMBER
OAKLAND, CA 94612-0250			2629	
			MAIL DATE	DELIVERY MODE
			04/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

Interview Summary	Application No.	Applicant(s)	
	10/817,564	GRAHAM, DAVID S.	
	Examiner	Art Unit	
	Jimmy H. Nguyen	2629	

All participants (applicant, applicant's representative, PTO personnel):

(1) Jimmy H. Nguyen. (3) _____.

(2) James W. Rose (applicant's rep.). (4) _____.

Date of Interview: 12 April 2007.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
If Yes, brief description: _____.

Claim(s) discussed: proposed claims 1-13, 15, 16, 18, 20-25, 27-38.

Identification of prior art discussed: Graham et al. (US 5,914,709) and Francis et al. (US 6,181,842 B1).

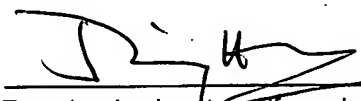
Agreement with respect to the claims f) ☐ was reached. g) ☐ was not reached. h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.



Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Examiner agreed no amendment made to the original Fig. 1. Applicant's representative agreed to remove "as controlled by sleep mode element 25" in paragraph [0021] of the specification, as amended in the amendment filed 12/20/06. Discussed how to amend all proposed claims to avoid informalities and to overcome the rejections under 35 USC 112, first and second paragraphs, in the last Office Action dated 01/31/2007. See the attached copy of the proposed amendment. Regarding to the Graham and Francis references, Applicant's representative pointed out these references failing to teach the lamina of light being continuous, as newly amended. In response, Examiner stated that when the new amendment is formally filed and properly entered, examiner further considers applicant's argument regarding to the newly added limitation.

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NO. 920

P. 2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Graham

Attorney Docket No.: GRAMP005

Application No.: 10/817,564

Examiner: Nguyen, Jimmy

Filed: April 1, 2004

Group: 2629

Title: APPARATUS AND METHOD FOR A
DATA INPUT DEVICE USING A LIGHT
LAMINA SCREEN AND AN OPTICAL
POSITION DIGITIZER.

Confirmation No. 3810

DRAFT

AMENDMENT B - After Final

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Final Office Action dated January 31, 2007, please amend the above-identified patent application as follows:

Amendments to the Claims are reflected in the listing of claims, which begin on page 2 of this paper.

Amendments to the Drawings begin on page 11.

Remarks/Arguments begin on page 12 of this paper.

*Note: This must
be attached to
Interview Summary
PTOL-413*

JHN

04/12/07

GRAMP005

1

10/817,564

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An apparatus, comprising;

a data input device, the data input device comprising: a light source configured to generate a ~~substantially continuous~~ lamina of light, the ~~substantially continuous~~ lamina of light being generated when the data input device is on; and

an optical position detection device, optically coupled to the ~~substantially continuous~~ lamina of light, and configured to detect data entries to the input device by determining the location of interrupts in the ~~substantially continuous~~ lamina caused when data is entered to the input device.

2. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina comprises one or more of the following dimensions:

(i). a one dimension plane defined by a first axis;

(ii) a two dimensional plane defined by a first axis and a second axis; or

(iii) a three dimensional space defined by a first axis, a second axis, and a third axis.

3. (Currently Amended) The apparatus of claim 1, further comprising a display screen, the lamina of light being positioned in the free space adjacent the display screen, whereby the ~~substantially continuous~~ lamina of light in the free space adjacent to the display screen is interrupted when data entries directed to the display screen are made by contacting the display screen.

4. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina of light is of uniform intensity. ←

5. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina of light is of non-uniform intensity. ←

6. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina of light is generated from a collimated light source. ←

7. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina of light has one of the following wavelength ranges: ←

(i) an extended wavelength range from 350 to 1100 nanometers;

(ii) a narrow wavelength range within 2 nanometers; or

(iii) a substantially homogeneous wavelength.

8. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina of light has a wavelength determined by ~~one or more of the following:~~ ←

(i) an incandescent light source used to generate the ~~substantially continuous~~ lamina of light; ←

(ii) a specific wave length range substantially matching the response profile of a light receiving element used in the optical position detection device;

(iii) an Light Emitting Diode;

(iv) a Vertical Cavity Surface Emitting Laser (VCSEL), or

(v) an IR wavelength generator used to generate the ~~substantially continuous~~ lamina of light. ←

9. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina of light is continuously on during operation of the data input device. ←

10. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina of light is periodically cycled on and off during operation of the data input device. ←

11. (Currently Amended) The apparatus of claim 1, further comprising a filter subtraction device configured to subtract the measured ambient light during an off cycle of the ~~substantially continuous~~ lamina of light from the measured light during an on cycle of the lamina of light. ←

12. (Currently Amended) The apparatus of claim 3, wherein the display screen is for one of the following types of devices: a data entry device, a personal computer, a workstation, a computer server, a point of sale terminal, a mobile computer, a personal digital assistant (PDA), a cell phone. ←

13. (Currently Amended) The apparatus of claim 1, ~~further comprising:~~

wherein

~~a light source configured to generate the substantially continuous lamina of light,~~ the light source^{is} positioned on one side of the ~~substantially continuous~~ lamina of light opposed to the optical position detection device located on the opposite side of the ~~substantially continuous~~ lamina of light. ←

14. (Previously Presented) The apparatus of claim 13, wherein the light source is generated from one of the following sources of light:

(i) a point source and a collimating lens; or

(ii) an LED.

15. (Currently Amended) The apparatus of claim 1, wherein the optical position detection device further comprises:

a light receiving array, the light receiving array configured to detect the position of an interrupt in the ~~substantially continuous~~ lamina of light caused during a data entry to the data input device; and

a processor, coupled to the light receiving array, the processor configured to calculate the coordinate of the interrupt on the ~~substantially continuous~~ lamina of light based on the position of the interrupt as detected by the light receiving array.

16. (Currently Amended) The apparatus of claim 15, wherein the light receiving array is a waveguide substrate, the waveguide substrate including:

a plurality of waveguide channels, each waveguide channel having a light input end proximate the ~~substantially continuous~~ lamina of light and an output end; and

a plurality of photosensitive elements, each photosensitive element positioned proximate the output end of one of the waveguide channels, and configured to convert a light signal received through the waveguide channel and to convert it into an electrical signal.

17. (Previously Presented) The apparatus of claim 16, wherein the photosensitive elements comprise one of the following types of photosensitive elements: charge coupled devices or Metal Oxide Semiconductor (MOS) imaging devices.

18. (Currently Amended) The apparatus of claim 16, wherein the light receiving array further comprises a plurality of light receiving elements configured to direct incident light from the

~~substantially continuous~~ lamina into the light input end of each of the plurality of waveguide channels respectively. ←

19. (Previously Presented) The apparatus of claim 18, wherein the light receiving elements comprises one of the following:

(i) a single lens;

(ii) a compound lens; or

(iii) an optical system.

20. (Currently Amended) The apparatus of claim 15, wherein the optical position detection device further comprises a light filter to filter a selected wavelength range of light from the ~~substantially continuous~~ lamina of light. ←

21. (Currently Amended) The apparatus of claim 1, wherein the ~~substantially continuous~~ lamina of light defines a two dimensional plane and the optical position detection device further comprises a first light receiving array positioned along one side of the ~~substantially continuous~~ lamina and a second light receiving array positioned along a second side of the ~~substantially continuous~~ lamina, wherein the first side and the second side are adjacent to one another. ←

22. (Currently Amended) The apparatus of claim 21, further comprising a first light source and a second light source positioned along a third side and an fourth side of the ~~substantially continuous~~ lamina, the third side and the fourth side being adjacent to one another and being opposite of the first side and the second side respectively. ←

23. (Currently Amended) The apparatus of claim 1, further comprising a sleep mode element configured to dim the ~~substantially continuous~~ lamina of light if a data entry is not detected by the optical position detection device after a predetermined period of time. ←

24. (Currently Amended) A method comprising;

interrupting a ~~substantially continuous~~ lamina of light at selected position, the selected position representing a data entry to a data input device; and

calculating the coordinate location of the interrupt in the ~~substantially continuous~~ lamina of light to determine the data entry.

25. (Currently Amended) The method of claim 24, wherein the interrupting the ~~substantially continuous~~ lamina of light at the selected position comprises:

identifying a position on a display screen corresponding to a data entry;

touching with an input device the position on the display screen corresponding to the data entry; and

interrupting the ~~substantially continuous~~ laminate lamina of light positioned in the free space adjacent the display screen during the touching of the display screen with the input device; and wherein the method further comprises:

identifying the data entry by determining the coordinates of the interruption in the ~~substantially continuous~~ lamina of light.

26. (Previously Presented) The method of claim 25, wherein the determining the coordinates of the interruption further comprises:

determining the position where incident lamina light is blocked at one or more of a plurality of light receiving elements.

27. (Currently Amended) The method of claim 24 further comprising generating the ~~substantially continuous~~ lamina of light prior to interrupting the ~~substantially continuous~~ lamina of light.

28. (Currently Amended) A method, comprising;

said providing

providing a data input device, *the data input device comprising:*
a light source configured to generate
providing a ~~substantially continuous~~ lamina of light, ~~the substantially~~
~~continuous lamina of light being generated when the data input device in~~ and

providing an optical position detection device, optically coupled to the ~~substantially continuous~~ lamina of light, and configured to detect data entries to the provided input device by determining the location of interrupts in the provided ~~substantially continuous~~ lamina caused when data is entered to the input device.

29. (Currently Amended) The method of claim 28, further comprising providing a display screen, the provided ~~substantially continuous~~ lamina of light being positioned in the free space adjacent the provided display screen, whereby the ~~substantially continuous~~ lamina of light in the free space adjacent the provided display screen is interrupted when data entries directed to the provided display screen are made by contacting the display screen.

30. (Currently Amended) The method of claim 28, wherein the provided ~~substantially continuous~~ lamina of light defines a two dimensional plane and the provided optical position detection device further comprises providing a first light receiving array positioned along one side of the ~~substantially continuous~~ lamina and providing a second light receiving array positioned along a second side of the ~~substantially continuous~~ lamina, wherein the first side and the second side are adjacent to one another.

31. (Currently Amended) The method of claim 30, further comprising providing a first light source and providing a second light source positioned along a third side and an fourth side of the ~~substantially~~ continuous lamina, the third side and the fourth side being adjacent to one another and being opposite of the first side and the second side respectively.

32. (Currently Amended) A method of claim 28, wherein the provided ~~substantially~~ continuous lamina comprises ~~one or more of the following dimensions:~~

(i). a one dimension plane defined by a first axis;

(ii) a two dimensional plane defined by a first axis and a second axis; or

(iii) a three dimensional space defined by a first axis, a second axis, and a third axis.

33. (Currently Amended) The method of claim 28, wherein the provided ~~substantially~~ continuous lamina of light is of uniform intensity.

34. (Currently Amended) The method of claim 28, wherein the provided ~~substantially~~ continuous lamina of light is of non-uniform intensity.

35. (Currently Amended) The method of claim 28, wherein the provided ~~substantially~~ continuous lamina of light is periodically cycled on and off during operation of the provided data input device.

36. (Currently Amended) The method of claim 35, further comprising providing a ~~filter~~ subtraction device configured to subtract the measured ambient light during an off cycle of the ~~substantially~~ continuous lamina of light from the measured light during an on cycle of the ~~substantially~~ continuous lamina of light.

37. (Currently Amended) The method of claim 29, wherein the display screen is for one of the following~~ing~~ types of devices: a data entry device, a personal computer, a workstation, a computer server, a mobile computer, a point of sale device, a personal digital assistant (PDA), a cell phone.

38. (Currently Amended) The method of claim 28, wherein the provided ~~substantially~~ continuous lamina of light is generated from a collimated light source.